

I claim:

1. Apparatus comprising:  
a master device for polling a plurality of slave devices and maintaining a fast  
5 polling list and a slow polling list,  
wherein each slave device is associated with either the fast polling list or the slow  
polling list, and wherein the fast polling list is polled by the master device more  
frequently than the slow polling list, and  
wherein a slave device is associated with the fast polling list if the slave device  
10 responds to a poll from the master device within a time period, and wherein the slave  
device is associated with the slow polling list if the slave device does not respond to the  
poll from the master device within the time period.
2. The apparatus of claim 1 wherein a slave device on the slow polling list is un-  
15 associated with the slow polling list and associated with the fast polling list if the slave  
device responds to a poll from the master device within the time period.
3. The apparatus of claim 2 wherein a slave device on the slow polling list is polled  
by the master device after all slave devices on the fast polling list have been polled.  
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4. The apparatus of claim 3 wherein the master device and the slave devices are  
coupled to a serial bus, and wherein the master device polls the slave devices by sending  
commands on the serial bus.

5. Apparatus comprising:
- a plurality of slave devices;
  - a plurality of control devices that are capable of being master devices;
  - 5 a plurality of serial buses to which the control devices and slave devices are coupled;
  - wherein the plurality of control devices arbitrate to determine which of the plurality of control devices shall be the master device for controlling the plurality of serial buses; and
  - 10 wherein the master device periodically switches between the plurality of serial buses to communicate with the slave devices.
6. The apparatus of claim 5 wherein the master device polls the slave devices and tracks responses to the polls received from the slave devices, and wherein, after the
- 15 master device has switched from a first of the plurality of serial buses to a second of the plurality of serial buses,
- if a slave device responds to a poll on the second of the plurality of serial buses, and the slave device did not respond to a poll on the first of the plurality of serial buses as evidenced by the tracked responses, the master device ceases switching to the first of the
  - 20 plurality of serial buses.
7. The apparatus of claim 6 wherein the master device periodically tests the first of the plurality of serial buses, and wherein the master device resumes switching to the first

of the plurality of serial buses if the first of the plurality of serial buses is ascertained to be functional.

8. The apparatus of claim 6 wherein each control device is coupled to a processor,  
5 and wherein a control device arbitrates to become the master device if the control device received a command from the processor which is fulfillable by accessing a slave device via a serial bus.

9. The apparatus of claim 8 wherein a slave control device arbitrates to become the  
10 master device by responding to a poll from the control device that is currently the master device, wherein the response to the poll includes information indicating that the slave control device is requesting to become the master device.

10. The apparatus of claim 9 wherein the slave control device becomes the master  
15 device if it receives an acknowledgement from the current master device.

11. The apparatus of claim 6 wherein each control station monitors activity on the  
plurality of serial buses, and wherein each control station is associated with a different timeout parameter, and wherein, for each control station,  
20 if no activity is detected on the plurality of serial buses, the control station waits for a time period associated with the timeout parameter, and if, upon expiry of the time period, there is still no activity detected on the plurality of serial buses, the control station becomes the master station.

12. A method comprising the steps of:
- polling by a master device a plurality of slave devices;
  - maintaining by the master device a fast polling list and a slow polling list;
  - 5 associating by the master device each slave device with either the fast polling list or the slow polling list, wherein the fast polling list is polled by the master device more frequently than the slow polling list, and
  - associating by the master device a slave device with the fast polling list if the slave device responds to a poll from the master device within a time period, and
  - 10 associating by the master device the slave device with the slow polling list if the slave device does not respond to the poll from the master device within the time period.

13. The method of claim 12 further comprising the step of:
- unassociating by the master device a slave device on the slow polling list and
  - 15 associating by the master device the slave device with the fast polling list if the slave device responds to a poll from the master device within the time period.

14. The method of claim 13 further including the step of:
- polling by the master device a slave device on the slow polling list after all slave
  - 20 devices on the fast polling list have been polled.

15. The method of claim 14 wherein the step of polling by a master device a plurality of slave devices comprises sending commands on a serial bus.

16. A method comprising the steps of:
- arbitrating by a plurality of control devices to determine which of the plurality of control devices shall be a master device for controlling a plurality of serial buses;
- 5 periodically switching by the master device between the plurality of serial buses to communicate with the slave devices.
17. The method of claim 16 further comprising the steps of:
- polling by the master device the slave devices;
- 10 tracking by the master device responses to the polls received from the slave devices;
- and wherein, after the master device has switched from a first of the plurality of serial buses to a second of the plurality of serial buses, if a slave device responds to a poll on the second of the plurality of serial buses, and the slave device did not respond to a
- 15 poll on the first of the plurality of serial buses as evidenced by the tracked responses, ceasing by the master device switching to the first of the plurality of serial buses.
18. The method of claim 17 further comprising the steps of:
- periodically testing by the master device the first of the plurality of serial buses;
- 20 resuming switching by the master device to the first of the plurality of serial buses if the first of the plurality of serial buses is ascertained to be functional.
19. The method of claim 16 wherein the step of arbitrating comprises the steps of:

receiving by a control device a command from a processor;  
requesting by the control device to become the master device if the command  
received from the processor is fulfillable by accessing a slave device via a serial bus.

5 20. The method of claim 19 wherein a slave control device requests to become the  
master device by responding to a poll from the control device that is currently the master  
device, wherein the response to the poll includes information indicating that the slave  
control device is requesting to become the master device.

10 21. The method of claim 20 further comprising the step of:  
the slave control device becoming the master device if the slave control device  
receives an acknowledgement from the control device that is currently the master device.

22. The method of claim 16 further comprising the steps of:  
15 monitoring by each control station activity on the plurality of serial buses, and  
wherein each control station is associated with a different timeout parameter, and  
wherein, for each control station,  
detecting activity on the plurality of serial buses;  
if no activity is detected on the plurality of serial buses, waiting for a time period  
20 associated with the timeout parameter, and if, upon expiry of the time period, there is still  
no activity detected on the plurality of serial buses, becoming the master station.

23. A program product comprising a computer readable medium having embodied therein a computer program for storing data, the computer program comprising:

logic for polling by a master device a plurality of slave devices;

logic for maintaining by the master device a fast polling list and a slow polling

5 list;

logic for associating by the master device each slave device with either the fast polling list or the slow polling list, wherein the fast polling list is polled by the master device more frequently than the slow polling list, and

logic for associating by the master device a slave device with the fast polling list

10 if the slave device responds to a poll from the master device within a time period, and

associating by the master device the slave device with the slow polling list if the slave

device does not respond to the poll from the master device within the time period.

24. The program product of claim 23 further comprising:

15 logic for unassociating by the master device a slave device on the slow polling list and associating by the master device the slave device with the fast polling list if the slave device responds to a poll from the master device within the time period.

25. The program product of claim 24 further comprising:

20 logic for polling by the master device a slave device on the slow polling list after all slave devices on the fast polling list have been polled.

26. The program product of claim 25 wherein the logic for polling by a master device a plurality of slave devices comprises sending commands on a serial bus.

27. A program product comprising a computer readable medium having embodied  
5 therein a computer program for storing data, the computer program comprising:

logic for arbitrating by a plurality of control devices to determine which of the plurality of control devices shall be a master device for controlling a plurality of serial buses;

logic for periodically switching by the master device between the plurality of  
10 serial buses to communicate with the slave devices.

28. The program product of claim 27 further comprising the steps of:

logic for polling by the master device the slave devices;

logic for tracking by the master device responses to the polls received from the  
15 slave devices;

logic for causing, after the master device has switched from a first of the plurality of serial buses to a second of the plurality of serial buses, and if a slave device responds to a poll on the second of the plurality of serial buses, and the slave device did not respond to a poll on the first of the plurality of serial buses as evidenced by the tracked  
20 responses, ceasing by the master device switching to the first of the plurality of serial buses.

29. The program product of claim 28 further comprising:



logic for periodically testing by the master device the first of the plurality of serial buses;

logic for resuming switching by the master device to the first of the plurality of serial buses if the first of the plurality of serial buses is ascertained to be functional.

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30. The program product of claim 27 wherein logic for arbitrating comprises:

logic for receiving by a control device a command from a processor;

logic for requesting by the control device to become the master device if the command received from the processor is fulfillable by accessing a slave device via a serial bus.

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31. The program product of claim 30 wherein the logic for requesting includes logic for responding to a poll from the control device that is currently the master device, wherein the response to the poll includes information indicating that the slave control device is requesting to become the master device.

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32. The program product of claim 31 further comprising:

logic for causing the slave control device to become the master device if the slave control device receives an acknowledgement from the control device that is currently the master device.

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33. The program product of claim 27 further comprising the steps of:

logic for monitoring by each control station activity on the plurality of serial buses, and wherein each control station is associated with a different timeout parameter, and wherein, for each control station;

logic for detecting activity on the plurality of serial buses;

- 5        logic functional such that, if no activity is detected on the plurality of serial buses, waiting for a time period associated with the timeout parameter, and if, upon expiry of the time period, there is still no activity detected on the plurality of serial buses, becoming the master station.

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